DOCUMENT RESUME

ED 480 365 CE 085 349

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TITLE	Keeping the Future Alive for Youth in High School Vocational Studies. Research Brief.
INSTITUTION	Southern Regional Education Board, Atlanta, GA.
REPORT NO	No-8
PUB DATE	1997-06-00
NOTE	6p.; For related Briefs, see CE 085 342-350.
AVAILABLE FROM	For full text: http://www.sreb.org/programs/hstw/publications/briefs/97brief8.asp.
PUB TYPE	Guides - Non-Classroom (055) -- Information Analyses (070)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	*Academic Education; Education Work Relationship; *Educational Change; *Educational Responsibility; Employment Potential; Employment Qualifications; Futures (of Society); High School Students; High Schools; *Instructional Design; Job Skills; Mathematics Achievement; Needs Assessment; *Noncollege Bound Students; Outcomes of Education; Reading Achievement; School Role; Science Achievement; Teacher Student Relationship; *Vocational Education
IDENTIFIERS	*High Schools That Work

ABSTRACT

The 1996 High Schools That Work (HSTW) Assessment provides ample evidence that HSTW strategies can make a big difference in student success. Students who completed an upgraded academic core and challenging vocational courses met HSTW goals and were actively sought by employers and postsecondary schools. However, too many career-bound high school students are not measuring up in areas considered critical for success in the workplace. Too many are taking the wrong courses in high school, exerting very little effort in their academic and technical studies, and scoring low on achievement tests. It is not that career-bound students cannot perform at higher levels but rather than the vocational instructional system is failing to challenge them to do so. HSTW therefore believes that vocational courses must do the following things: (1) model the concept of quality work; (2) make students independent learners; (3) cause students to be active rather than passive participants in the learning process; (4) result in quality products that reflect real life; (5) confront shortcomings and show students how to improve; (6) include tough assignments that require work outside of class; (7) require teamwork, with teachers serving as coaches; (8) prepare students for workplace and education beyond high school; and (9) give students open-ended problems to solve by using academic, technical, and personal skills. (MN)

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ED 480 365

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Research Brief
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June 1997

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Office of Educational Research and Improvement
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HIGH SCHOOLS THAT WORK

Research Brief

Number 8 - June 1997

Keeping the Future Alive for Youth in High School Vocational Studies

By Gene Bottoms

The 1996 *High Schools That Work* Assessment provides ample evidence that *HSTW* strategies can make a big difference in student success. The almost 17,000 career-bound students who participated in the assessment scored higher than their counterparts two years earlier in all three areas—reading, mathematics and science. Students at high-scoring *HSTW* schools—those in the top 25 percent of all schools—actually exceeded the *HSTW* goals in all three areas. Students who completed an upgraded academic core and challenging vocational courses met *HSTW* goals and were actively sought by employers and postsecondary schools.

■ More Progress Is Needed

Despite these findings, too many career-bound high school students—the ones we are depending on to provide products and services in the 21st century—are not measuring up in areas considered critical for success in the workplace. Too many of them take the wrong courses in high school, exert very little effort in their academic and technical studies and score low on achievement tests. Looking back, they admit they should have worked harder.

The 1996 assessment revealed startling information:

- Only one-fourth of these students met all *HSTW* performance goals in reading, mathematics and science. The goals are based on what *HSTW* believes career-bound students need to know and understand to pass general qualifying exams for employment and to pursue further study. Experience is proving that career-bound students who take the right courses and achieve at an outstanding level in key academic areas will have an advantage in seeking access to the workplace. In 1997 the BellSouth Corporation began administering employment tests to youth who received the *HSTW* Certificate of Educational Achievement. Ninety-seven percent of the first group of youth passed the BellSouth

Figure 1

Percentage of Students in Broad Fields of Career Studies Who Met the *HSTW* Performance Goals in Reading, Mathematics and Science in 1996

Program Area	Reading	Mathematics	Science
Agriculture	36%	44%	44%
Business	53%	48%	37%
Consumer Science	35%	27%	21%
Manufacturing	29%	39%	39%
Transportation	25%	38%	39%
Home and Commercial Repair	19%	31%	33%
Health	52%	40%	34%
Communications	45%	50%	50%
Electronics	38%	54%	53%
Cosmetology	26%	24%	18%
Construction	27%	39%	39%
Community Protection	41%	39%	38%
Drafting and Design	46%	68%	61%

Figure 2

Employer Ratings of Career-Bound Graduates' Proficiency Levels

Skill	Percentage of Employers Who Said This Skill Was Highly Important	Percentage of Career-Bound Graduates Whose Proficiency Was Ranked Superior by Employers
Interpersonal		
Team member	73%	54%
Serves customers	65%	45%
Information		
Acquires and evaluates information	51%	41%
Interprets and communicates information	57%	39%
Academic Skills		
Mathematics	39%	32%
Science	13%	13%
Reading	51%	41%
Writing	39%	34%
Listening	77%	49%
Speaking	62%	42%
Thinking Skills		
Creative thinking	36%	28%
Decision making	37%	24%
Problem solving	42%	28%
Knowing how to learn	66%	44%
Personal Qualities		
Responsibility	79%	57%
Self-management	63%	44%
Integrity/honesty	87%	74%

test—compared to only 51 percent of applicants from the general population. (See Figure 1 for the percentage of students who met the *HSTW* reading, mathematics and science goals in broad fields of career studies.)

- Only 17 percent met all three performance goals and completed three of four items in the *HSTW*-recommended academic and vocational/technical curriculum. The curriculum calls for college preparatory-level English, mathematics and science courses and at least four courses in a career concentration.
- As a group, only business, marketing and computer students had average scores that met the reading goal; only drafting/design and electronics students had average scores that met the mathematics goal; and only drafting/design students had average scores that met the science goal.

Students who used mathematics and reading skills to complete vocational assignments daily or weekly had significantly higher average reading and mathematics scores than students who seldom or never had such experiences.

■ Rigor Needed in Vocational Classes

It is not that career-bound students cannot perform at a higher level; it is simply that the vocational instructional system fails to challenge students to do so.

When asked about their vocational courses, career-bound students participating in the 1996 *HSTW* assessment revealed low-level expectations and standards: Only about half said reading, writing, mathematics and science were emphasized in vocational classes. Fewer than half said they were required to use reading, mathematics or science in vocational homework assignments. Only 66 percent used computers to complete assignments several times a year. Only 37 percent made in-class presentations several times a year.

In 1996 *HSTW* conducted a follow-up study of career-bound students who took the assessment two years earlier. More than one-third of these youth said their vocational teachers should have placed more emphasis on meeting high standards and expectations. A full 75 percent said high schools should have focused more attention on vocational and technical programs.

Three-fourths of these youth said they should have been required to meet higher academic standards. They also said their vocational teachers should have asked them to use mathematical concepts, read and interpret technical books and manuals and write technical reports and business letters.

■ Employers See a Need for Change

Employers confirm that career-bound students are being short-changed. In 1996 *HSTW* surveyed employers who hired vocational graduates. These employers reported that career-bound youth lack many of the skills considered vital in the workplace. Sixty-six percent of employers ranked "knowing how to learn" as a valuable skill, but they reported that only 44 percent of new hires possess this trait at a superior level. In a number of interpersonal, information, academic, thinking and personal skills, a large imbalance exists between what employers want and what they get. (See Figure 2 for some of the competencies and skills rated most important by employers and the percentages of employers who said recent career-bound high school graduates had superior proficiency in these areas.)

■ Teaching More Than Procedural Skills in Vocational Classes

These findings speak loudly of a need for dramatic change in what is taught in high school vocational courses and what is expected of students who enroll in them. *HSTW* believes that vocational courses must:

- Model the concept of quality work;
- Make students independent learners;
- Cause students to be active rather than passive participants in the learning process;
- Result in quality products that reflect real life;
- Confront shortcomings and show students how to improve;
- Contain tough assignments that require work outside of class;
- Require teamwork, with teachers serving as coaches;
- Prepare students for the workplace and education beyond high school;
- Give students open-ended problems to solve by using academic, technical and personal skills.

Many schools in the *HSTW* network are mounting exemplary efforts to redesign and refocus high school vocational studies. They are creating new majors—not just repackaging the old ones. They are eliciting employer input concerning curriculum and instruction and forging work-based partnerships with local business and industry.

Unfortunately, many vocational programs are still preparing students for the old workplace where employees were closely supervised and were seldom asked to solve problems or make improvements. These programs are so out-of-step with today's workplace that graduates will find it impossible to get and keep a good job or succeed in postsecondary education.

■ *HSTW* Priority: Vocational Instruction

Vocational educators have a pivotal role to play in meeting the demand for modern workers with strong academic skills and "cutting edge" vocational/technical skills.

One *HSTW* objective in working with over 650 sites in 21 states is to enrich the vocational curriculum by helping schools overhaul outdated vocational courses, introduce new teaching methods and require students to meet real-world standards.

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